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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,381	12/15/2003	Alpaslan Demir	I-2-0535.IUS	4526
24374	7590	05/16/2005	EXAMINER	
VOLPE AND KOENIG, P.C. DEPT. ICC UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			CHANG, EDITH M	
		ART UNIT		PAPER NUMBER
		2637		
DATE MAILED: 05/16/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/736,381	DEMIR ET AL. <i>(Signature)</i>
	<b>Examiner</b>	<b>Art Unit</b>
	Edith M. Chang	2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 15 December 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-57 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-47, 50-53, 56 and 57 is/are rejected.  
 7) Claim(s) 48-49, 54-55 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 15 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

***Claim Objections***

1. Claims 7-9, 12-13, 22-24, 26-27, 37-39, 41-43, and 46-57 are objected to because of the following informalities:

Claims 7, 22, 37, 47 & 53, line 2: “a phase offset” is suggested changing to “the phase offset”.

Claims 12-13, 26-27, 41-42, lines 2 & 3: “it is” is suggested changing to “the amplifier”.

Claims 46 & 52 line 5, Claims 51 & 57 lines 3 & 4: “it is” is suggested changing to “the amplifier”.

Claims 8-9, 23-24, 38-39, 43, 48-50 and 54-56 are directly or indirectly dependent on the objected claims 7, 22, 37, 46 and 52.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 16 & 31 line 7, Claims 5 & 20 line 4, Claims 3, 6, 21 & 36 line 7, Claim 35 lines 3-4: “the amplification control signal” lacks antecedent basis.

Art Unit: 2637

Claims 2-4, 7-15, 17-19, 22-30, 32-34, and 37-45 are dependent on the rejected claims 1, 16 and 31.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7, 10-22, 25-37, 40-47, 50-53, and 56-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Chien (US 2004/0203472 A1).

Regarding claims 1, 16 & 31, in FIG.7 Chien teaches a wireless transceiver 700 comprising: an amplifier LNA 708 (as the amplifier) controlled by a signal (as the amplitude control signal) from a Controller 768 to Switch 706 to On (enable) or Off (disable) the amplifier LNA according to TABLE 1 (page 5 section [0088] & page 6 TABLE 1); and an IQ Compensation 728 (as the insertion phase variation compensation module) to compensate the mismatched phases of a signal received from LNA through the converters 710 & 712 of the receiver part of the transceiver (page 1 section [0002]) wherein the imbalances/mismatches are the result of asymmetry in circuit when the switch 706 turning on or off the LAN (page 2 section [0019] lines 1-4) contributes the asymmetry, and IC fabrication process.

Regarding claims 2, 17 & 32, in FIG.7 Chien teaches a receiver (710 & 720) converting the received analog signal from LNA 708 to analog I (the output of 710) and a Q (the output of

Art Unit: 2637

720) components; and the ADC (722 & 724) converts the analog I and Q components to digital I and Q components.

Regarding claims 3-4, 18-19 & 33-34, in FIG.7 Chien teaches the Receive Modem Processor 732, Medium Access Controller, and the Host Controller (as the modem) receiving the digital I and Q components from IQ Compensation 728 and controlling the Controller 768 to generate the control signal (page 7 section [0105]), wherein the RX data having the power of the received analog IQ components input to the ADC.

Regarding claims 5-6, 20-21 & 35-36, in FIG.7, Chien teaches a Controller 768 (as the processor) accepting inputs from MAC 736, in turn, being controlled by a Host Controller (page 7 section [0105]) to generate the control signal; and a Compensation Factor Estimator 726 with the Compensation Memory 730 (as the LUT, FIG.19 is an implementation of the Receiver Compensation Factor Estimator 726, page 3 section [0050]) in communication with the Controller 768 and the IQ Compensation 728, wherein the Compensation Factor Estimator 726 with the Compensation Memory 730 receives the control signal form the Controller 768 (page 7 section [0098] lines 9-12) and provide an estimate of the phase mismatch (the output  $\sin\phi_r - \phi_r$  of FIG.19) as a function of the phase offset  $\phi_r$  base on the control signal.

Regarding claims 7, 22 & 37, Chien teaches a Sin function, in turn, providing a Cos function.

Regarding claims 10, 25 & 40, in FIG.30D & 31, Chien teaches the communication signal including first Data slot 3022 or 3110 and second Data slot 3024 separated by a Midamble slot 3032 or Preamble 3102, Header 3104 and Midamble 3108 (as guard period, page 14 section [0187], TABLE 3 page 16) at which the mode of the switch being set by the control signal from

Art Unit: 2637

the Controller 768 accordingly (TABLE 1 page 6 and section [0192] lines 1-4 that LNA turns on or off).

Regarding claims 11, 28 & 43, in FIG.30D & 31, Chien teaches the communication signal including first Data slot 3022 or 3110 and second Data slot 3024 separated by a Midamble slot 3032 or Preamble 3102, Header 3104 and Midamble 3108 (page 14 section [0187], TABLE 3 page 16) at which the LNA set to on or off by the switch 706 being controlled by the control signal from the Controller 768 accordingly based on the mode (TABLE 1 page 6 and section [0192] lines 1-4 that LNA turns on or off).

Regarding claims 12-13, 26-27 & 41-42, in FIG.10, FIG.12A&B and FIG.13A&B, Chien teaches the receive mode and transmit mod of the transceiver, wherein the amplifier is on when the data of one data slot is received and the amplifier is off when the data of another data slot is transmitted.

Regarding claims 14-15, 29-30 & 44-45, in FIG.31, page 14 section [0192] lines 1-4, and TABLE 3 page 16, Chien teaches that Preamble, Header and Midable provide test signals and estimation requests, hence the estimation provided to the IQ Compensation which in turn adjusts the communication signal accordingly.

Regarding claims 46 & 52, in FIG.7 Chien teaches a wireless transceiver 700 comprising: an amplifier LNA 708 (as the amplifier) controlled by a signal (*providing* as the amplitude control signal) from a Controller 768 to Switch 706 to On (*enabling* from disable/Off) or Off (*disabling* from enable/On) the amplifier LNA according to TABLE 1 (page 5 section [0088] & page 6 TABLE 1); and an IQ Compensation 728 (as the insertion phase variation compensation module) to compensate/*adjust* the mismatched phases of a signal received from

Art Unit: 2637

LNA through the converters 710 & 712 of the receiver part of the transceiver (page 1 section [0002]) based on the *estimation* provided by Compensation Factor Estimator 726, wherein the imbalances/mismatches are the result of asymmetry in circuit when the switch 706 turning on or off the LAN (page 2 section [0019] lines 1-4) contributes the asymmetry, and IC fabrication process.

Regarding claims 47 & 53, in FIG.19 Chien teaches an implementation of the Receiver Compensation Factor Estimator 726 (page 3 section [0050]) in communication with the Controller 768 and the IQ Compensation 728, wherein the Compensation Factor Estimator 726 with the Compensation Memory 730 receives the control signal from the Controller 768 (page 7 section [0098] lines 9-12) and provide an estimate of the phase mismatch (the output  $\sin\phi_r - \phi_r$  of FIG.19) as a function of the phase offset  $\phi_r$  base on the control signal, in turn, provide a Cos function.

Regarding claims 50-51 & 56-57, in FIG.30D & 31, Chien teaches the communication signal including first Data slot 3022 or 3110 and second Data slot 3024 separated by a Midamble slot 3032 or Preamble 3102, Header 3104 and Midamble 3108 (as guard period, page 14 section [0187], TABLE 3 page 16) at which the LNA set to on or off by the switch 706 being controlled by the control signal *provided* from the Controller 768 accordingly based on the mode (TABLE 1 page 6 and section [0192] lines 1-4 that LNA turns on or off). The step of providing the control signal to the LNA is performed during the guard period.

*Allowable Subject Matter*

6. Claims 8-9, 23-24, and 38-39 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. Claims 48-49 and 54-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a wireless transmit/receive unit, a communication system as a whole, the combination of elements and features, which includes an insertion phase variation compensation module counteracting the effect of a phase offset introduced into the received signal by adjusting an inphase signal component phase according the function  $(\text{Cos}(x) \times \text{Real input}) - (\text{Sin}(x) \times \text{Imaginary input})$  or adjusting a quadrature signal component phase according the function  $(\text{Sin}(x) \times \text{Real input}) + (\text{Cos}(x) \times \text{Imaginary input})$ .

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2637

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang  
May 10, 2005



TEMESGHEN GHEBRETNSAE  
PRIMARY EXAMINER